REMARKS

This application has been carefully reviewed in light of the final Office Action dated December 21, 2009. Claims 1, 4 to 7 and 10 to 15 are in the application, with Claims 1, 7 and 12 being independent. Claims 1, 4, 7, 10 and 12 to 14 have been amended, and Claim 15 has been newly-added. Reconsideration and further examination are respectfully requested.

In the Office Action, Claims 7, 10 and 11 were rejected under 35 U.S.C. § 101 for allegedly not being tied to another statutory category or not transforming underlying subject matter. The amendments to Claim 7 are seen to attend to this rejection. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Claims 1, 4 to 7 and 10 to 14 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 7,853,465 (Ohnishi) in view of U.S. Patent No. 6,490,055 (Shimizu). Reconsideration and withdrawal are respectfully requested.

Independent Claim 1 as amended generally concerns a printing control apparatus for outputting print data and executing printing. The printing control apparatus comprises storage means, to which rendering instructions are input, for storing the rendering instructions page by page, processing means for performing color processing and n-value conversion processing of the rendering instructions stored in the storage means, and first rendering means for developing the rendering instructions of each scan line into multivalued bitmap data, performing color processing of the multivalued bitmap data and converting the color processed multivalued bitmap data to n-valued bitmap data, wherein the number of bits associated with the multivalued bitmap data is greater than n. The printing control apparatus further comprises second rendering means for performing

rendering processing by pasting n-valued data converted by the n-value conversion

processing into an object corresponding to the rendering instructions to generate n-valued

bitmap data, and determining means for reading out the rendering instructions that have

been stored in the storage means and determining whether the rendering instructions

include a rendering instruction other than overwriting for each scan line after the

processing means has processed the rendering instructions. In addition, the printing control

apparatus comprises control means for extracting edges of objects in the rendering

instructions in each scan line and exercising control so as to cause the first rendering means

to render the multivalued bitmap data between the edges if the determining means

determines that the rendering instructions include a rendering instruction other than the

overwriting for a scan line, and to cause the second rendering means to generate the n-

valued bitmap data if the determining means determines that the rendering instructions do

not include a rendering instruction other than the overwriting for the scan line. The control

means causes the first rendering means or the second rendering means to develop the

rendering instructions into bitmap data line by line.

Thus, among its many features, Claim 1 provides for (i) processing means

for performing color processing and n-value conversion processing of rendering

instructions stored in storage means, (ii) second rendering means for performing rendering

processing by pasting n-valued data converted by the n-value conversion processing into an

object corresponding to the rendering instructions to generate n-valued bitmap data, and

(iii) determining means for reading out the rendering instructions that have been stored in

the storage means and determining whether the rendering instructions include a rendering

instruction other than overwriting for each scan line after the processing means has processed the rendering instructions.

By virtue of foregoing features (i) to (iii), it is possible to perform rendering at high speed, because of pasting n-valued data converted by the n-value conversion processing into an object corresponding to the rendering instructions, if the rendering instructions do not include a rendering instruction other than the overwriting for the scan line.

Turning to the applied references, Ohnishi and Shimizu are not seen to disclose or suggest at least foregoing features (i) to (iii).

As understood by Applicant, Ohnishi discloses developing a drawing command into a multi-value bitmap image, and performing color processing on the multi-value bitmap image. See Ohnishi, steps S26-10 and S26-21 in Fig. 26.

However, Ohnishi is not seen to disclose or suggest (i) processing means for performing color processing and n-value conversion processing of rendering instructions stored in storage means, (ii) second rendering means for performing rendering processing by pasting n-valued data converted by the n-value conversion processing into an object corresponding to the rendering instructions to generate n-valued bitmap data, and (iii) determining means for reading out the rendering instructions that have been stored in the storage means and determining whether the rendering instructions include a rendering instruction other than overwriting for each scan line after the processing means has processed the rendering instructions. Moreover, Ohnishi is not seen to disclose or suggest the attendant benefits provided by foregoing features (i) to (iii).

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Shimizu is not seen to compensate for the deficiencies of Ohnishi. In this regard, Shimizu is seen to disclose two types of rendering, one being a band rendering and the other being a degrade rendering. If an amount of input image is too large, the banding process is carried out and the rendering to the band is executed. See Shimizu, column 2, lines 29 to 59.

However, Shimizu is not seen to disclose or suggest foregoing features (i) to (iii), nor the attendant benefits provided thereby.

Claim 1 is therefore believed to be allowable over the applied references.

In addition, independent Claims 7 and 12 are method and printer driver claims, respectively, which generally correspond to apparatus Claim 1. Accordingly, Claims 7 and 12 are believed to be allowable for the same reasons.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

For example, dependent Claim 15 provides at least that the processing means performs the color processing and n-value conversion processing of all rendering instructions of a page to be processed that are stored in the storage means. The art of record is not seen to disclose or suggest at least this feature.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

No claim fees are believed due. However, should it be determined that additional claim fees are required under 37 C.F.R. 1.16 or 1.17, the Director is hereby authorized to charge such fees to Deposit Account 06-1205.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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